

III. REMARKS

1. Claims 1, 11, 21 and 22 are amended. Applicant appreciates the Examiner's indication of allowable subject matter in claims 8 and 18. However, for the reasons stated below, Applicant submits that the claims should be allowable in their present state.

2. Claims 1-4, 6, 11-14, 16, 21 and 22 are patentable over Lindoff et al., U.S. Patent No. 6,700,882 B1 ("Lindoff") under 35 U.S.C. §103(a). Claim 1 recites in pertinent part that "a different phase of the same training sequence is used in data frames transmitted through different antennas and the phase of the training sequence is changed by cyclically transferring the training sequence." This is not disclosed or suggested by Lindoff. The arguments against Lindoff presented in Applicant's prior responses are equally applicable here and incorporated by reference.

Lindoff discloses a method and apparatus for increasing data throughput and/or capacity in a TDMA system (abstract). Space diversity is a common factor in all the embodiments disclosed in Lindoff, which means that two separate antennas are used in the transmitter (See Summary and Figures). In Lindoff, the signals are distinguished and separated at the mobile station via the different paths (due to space diversity) (Col. 4, lines 10-15). In Applicant's invention even if the signals have the same training sequences, they can still be separated because of different phases of training sequences. As noted, the training sequence transmitted through the second antenna has a phase that is cyclically transferred k phases. (page 7, line 36; page 13, lines 31-33). Lindoff does not disclose or suggest a cyclic phase shift applied to a training sequence.

As recited in Applicant's claims, the training sequence is cyclically shifted a certain number of bit positions to obtain a phase shift. For example, if the training sequence is shifted four bit positions to the right ($k=4$), the rightmost bits are added to the left side of the phase shifted training sequence. This is not disclosed or suggested by Lindoff.

Moreover, in Lindoff, it is the data sequence that has the phase offset not the training sequence (Col. 6, lines 26-34). There is simply no disclosure or suggestion in Lindoff that a training sequence has a phase offset or that the phase of the training sequence is changed by cyclically transferring the training sequence as claimed by Applicant. Therefore claim 1 is patentable over Lindoff at least for this reason.

Furthermore, Lindoff does not provide the requisite motivation or suggestion to combine its different embodiments as suggested by the Examiner. The Examiner argues that the suggestion to combine the embodiments of Lindoff is disclosed at col. 8, lines 50-64. The Applicant respectfully disagrees. Col. 8, lines 50-64 merely suggests that "different ones of the techniques described can be simultaneously and/or fully or partially applied within a communications network and within a single cell in the network". An example of the embodiments being simultaneously and/or fully or partially applied is provided by Lindoff at col. 8, lines 59-64. Col. 8, lines 59-64 recite that "within a cell several mobile stations could communicate with a base station using the technique shown in FIGS. 2A-B, while other mobile stations in the cell communicate with the base station on different carrier frequencies using the techniques shown in FIGS. 5A-B and 6A-B." However, this passage cannot be read in a vacuum and to interpret

this language as the Examiner does would render other passages of Lindoff meaningless, in particular col. 8, lines 24-49.

Col. 8, lines 24-49 of Lindoff provide that phase offsets are omitted in the embodiments where the transmitter has two antennas. Thus, Lindoff explicitly teaches away from using a **different phase of the same training sequence** in data frames transmitted through different antennas. This explicit teaching combined with the fact that all the embodiments used in the above noted example (i.e. FIGS. 2A-B, 5A-B and 6A-B) have a base station with two antennas and a mobile station with one antenna clearly teach away from any attempt to combine FIG. 5B with FIG. 9. Therefore, there is simply no legal motivation present in Lindoff, as required under 35 U.S.C. §103(a), to modify Lindoff to achieve Applicant's invention. Thus, claim 1 is patentable over Lindoff. Claims 11, 21 and 22 are patentable over Lindoff for reasons similar to those described above with respect to claim 1. Claims 2-4, 6, 12-14 and 16 should also be allowable by reason of their respective dependencies.

3. Claims 7 and 17 are patentable over Lindoff in view of Guan at least in view of their respective dependencies, the reasons stated above, and the arguments raised in the prior response.

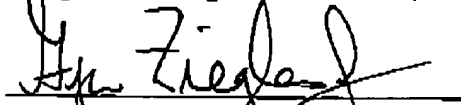
4. Claims 5, 9, 10, 15, 19 and 20 are patentable over Lindoff in view of Persson at least in view of their respective dependencies, for the reasons stated above, and the arguments raised in the prior response.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable

reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

The Commissioner is hereby authorized to charge payment for a two-month extension of time together with any other fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,



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3 April 2006

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